

WOOD DUST AND OCCUPATIONAL ASTHMA



WOOD DUST CAN BE HAZARDOUS

Thousands of Californians work with wood every day. Exposure to wood dust is common in many industries. For example, you may be exposed to wood dust if you work in a furniture or cabinet-making shop, construction, logging, a sawmill, a paper mill, or a plant that makes plywood, particle board, or fiberboard.

Breathing wood dust can cause a variety of health problems. One of the most serious is occupational asthma. Asthma is a lung condition that causes chest tightness, breathing difficulty, cough, and wheezing. It can be disabling and, on rare occasions, fatal. When caused by conditions on your job, it's called *occupational* asthma.

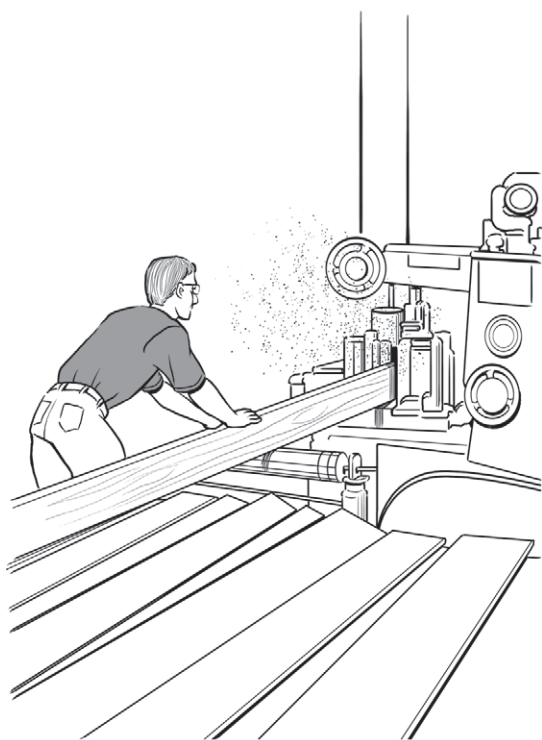
Occupational asthma is preventable. If you work with wood, the key is to keep your exposure to wood dust as low as possible. This factsheet will show you how.

Besides occupational asthma, wood dust also has other hazards which are not covered here. Dust from woods such as oak, mahogany, or ash can cause nasal cancer as well as irritate your skin and eyes. Wood dust is also combustible and may explode if exposed to heat or flames.

What's Inside?

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ONE WORKER'S STORY



A mill worker developed occupational asthma after working with California redwood for five years. His regular job was to work redwood with a planing machine and stack the wood.

Eventually he began to experience wheezing and shortness of breath. These symptoms often cleared up during weekends and vacations, but became worse during the work week.

Not only was the mill worker exposed to dust directly when cutting wood, but his entire work area also had a lot of wood dust around. Ventilation was poor. He was never trained about the health hazards of wood dust and how to protect himself.

After the mill worker was diagnosed with asthma, he underwent seven months of medical treatment. However, he still was not able to work around wood dust.

SYMPTOMS OF ASTHMA

You may have occupational asthma if you work around wood dust and develop these symptoms:

- Wheezing
- Tightness in the chest
- Cough
- Shortness of breath.

Symptoms can show up within a few months after you are exposed to wood dust, or they may not appear until you have been exposed for several years. You may first notice symptoms after you leave work each day. Often the symptoms clear up before you return to work the next day. They usually worsen during the work week and get better or disappear during weekends and vacations.

If you have any of these symptoms, talk to your employer, union, or doctor right away. In some cases, your doctor may limit your exposure or tell you that you can no longer work around wood dust.

Workers with occupational asthma may have severe symptoms if they come in contact with even a tiny amount of wood dust. Early diagnosis of occupational asthma and removal from exposure can prevent your asthma from getting worse.

DOES ALL WOOD DUST CAUSE ASTHMA?

Most types of wood dust can irritate your lungs and cause other breathing problems. Sometimes wood dust can cause asthma or make it worse. Some woods contain chemicals that make allergic reactions like asthma more likely. A few common examples are California redwood, teak, Western red cedar, oak, and ash.

Wood from some parts of a tree can be especially hazardous. The chemicals known to cause asthma are generally found in the inner parts of the tree, called the heartwood.

The hazard depends on the amount of wood dust that gets in the air, the size of the dust particles, the type of wood, the levels of asthma-causing substances in the wood, the additives in the wood, how long you are exposed to the dust, and your own body's resistance.

Unfortunately, even with woods that are known to cause asthma, there is very little information about how much exposure can make you sick. With many imported woods (such as those from Africa, South America, and Asia) there is even less information about health hazards. Therefore, protection from these wood dusts is especially important because we don't fully understand their ability to cause asthma.

WHAT TASKS EXPOSE WORKERS TO WOOD DUST?

You are at risk of breathing large amounts of wood dust whenever wood is being cut, worked, or finished. The dust particles released are so fine they can easily be inhaled.

For example, dust can be a problem when:

- Sawing
- Routing
- Turning
- Planing
- Drilling
- Sanding
- Repairing machines.

You can also be at risk when:

- Cleaning with compressed air
- Dry sweeping
- Disturbing dust on machines during maintenance work.



PREVENTING EXPOSURE IS BEST

The best protection from wood dust is to keep it out of the air in the first place. The law says that your employer must take steps like these to reduce your exposure:

Substitution. If feasible, use woods that are less likely to cause asthma.

Enclosure. Run machines inside an enclosure to decrease dust in the air.

General ventilation. Install good room ventilation. To be effective, ventilation systems must be designed and installed by trained professionals. Ventilation equipment such as filters and ducts must be checked often and properly maintained. If there is no ventilation system, see if there is a way to work outdoors.

Local exhaust ventilation. Equip woodworking machines, portable hand tools, and portable power tools with vacuum or exhaust systems that capture the dust at the source, before it can reach your breathing zone. Vacuum attachments with high efficiency particulate air (HEPA) filters are available for many tools.

Proper tool maintenance. Keep cutting tools sharp. As they become dull, they may release more dust particles into the air.



Good work practices. Be aware of how much dust is being produced. You may need more protection when you are working wood at high speed or perpendicular to the grain. For example, machine sanding causes more dust exposure than hand sanding because a larger area can be sanded in the same time. Cutting perpendicular to the grain produces more dust than cutting parallel to the grain.

Good housekeeping. Keep surfaces and floors free of wood chips and dust. Don't just brush off your clothing, skin, or surfaces or dry sweep floors. Don't use compressed air either. This will put more dust into the air. Instead, use wet clean-up methods (for example, wipe surfaces with a wet rag). Or use a vacuum cleaner with a HEPA filter.

Good personal hygiene. Wash up thoroughly and clean clothing after exposure to wood dust. Vacuum dust from your body and clothing when washing facilities are not available.

Proper waste disposal. Bag and seal wood dust waste since the dust can easily be released into the air.

Training. Train workers in the correct use and maintenance of equipment.

UNDERSTANDING RESPIRATORS

If you work in an area with high levels of wood dust, you may need a respirator. A respirator is a facepiece that provides you with clean air when you work around dust or chemicals. If your respirator fits well and works right, it can greatly reduce the amount of dust that you breathe.

For wood dust, you will probably be given a respirator that uses filters to clean the air. These respirators come in two styles. A half-face respirator just filters the air. A full-face respirator also provides eye protection.

Filters are not all the same. It is your employer's responsibility to give you the right respirator and filter for the job. Use only respirators and filters that have been approved by the National Institute for Occupational Safety and Health (NIOSH). Nonapproved paper dust masks (also called comfort masks) provide little protection. However, some approved half-face respirators look similar to nonapproved dust masks. Always look on the respirator for the NIOSH label.

Some respirators are disposable, but with others you can just replace the filter cartridges. If you have trouble breathing through your respirator, it may be clogged. Change the filters or the entire respirator immediately.



HALF-FACE



FULL-FACE

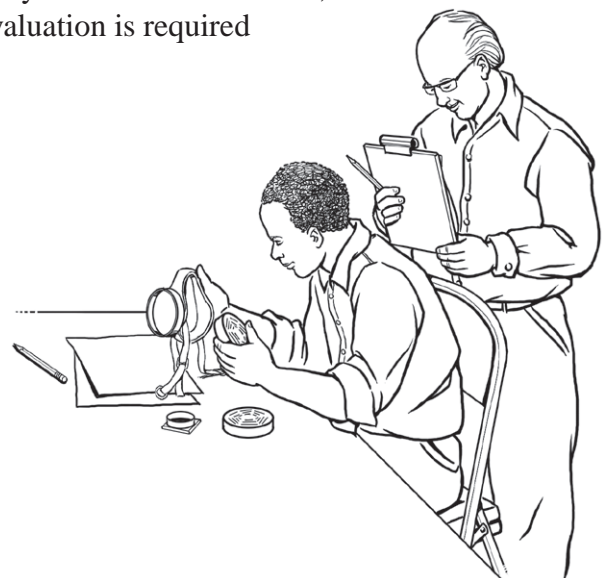
WEARING A RESPIRATOR

You should wear a respirator only as a last resort if other safety measures don't give enough protection. If you are given a respirator to use, the law says you must also be given:

A medical evaluation. Respirators are not safe for some people. They can make your lungs and heart work harder. This can be dangerous for anyone with heart trouble, asthma, or other breathing problems. A medical evaluation is required to make sure you can wear a respirator safely.

A fit test. A trained person must make sure your respirator is the right size, fits tightly to your face, and doesn't leak.

Training. Your employer must explain what type of respirator you have been given, what it does, and how to put it on. You must be shown how to inspect your respirator for damage, how to clean it, and how to store it properly so it is not crushed.



WHAT IS CAL/OSHA?



California law says that every worker has the right to a safe and healthy workplace. The Division of Occupational Safety and Health, usually called Cal/OSHA, is the state agency that enforces this law. It covers most workers in California, including those in private industry and those who work for state, county, and city governments.

Cal/OSHA has many workplace health and safety regulations, which are called standards. For example, there are standards that require employers to:

- Provide necessary personal protective equipment and training.
- Limit workers' exposure to chemicals, noise, and other hazards.
- Keep machines safe and in good condition.
- Set up an Injury and Illness Prevention Program (IIPP).
- Take steps to prevent repetitive strain injuries (RSIs) and other ergonomic problems.

If you think there is a health and safety hazard on your job, ask your employer about it first. You can also contact Cal/OSHA or your union (if you have one) to get information or make a complaint. Cal/OSHA will not tell your employer who made the complaint. The law says you can't be fired or punished for making a complaint.

Cal/OSHA may send an inspector to your workplace. If there are violations, your employer will be required to correct them and may have to pay a fine.

Employers with questions about wood dust or other workplace hazards can get advice from the Cal/OSHA Consultation Service.

YOUR RIGHT TO KNOW

According to Cal/OSHA, you have the **right to know** about any hazardous substances on your job. All wood dust, regardless of type, is considered hazardous and is covered by Cal/OSHA's Hazard Communication standard (Title 8, California Code of Regulations §5194). The standard can be viewed on the web at www.dir.ca.gov.

Under this standard, your employer must give you information and training about wood dust, its health effects, and how to protect yourself. Your employer may also have a **Material Safety Data Sheet (MSDS)** for wood dust. The MSDS gives information about the hazards of the dust. You have the right to see the MSDS and to make a copy. Unfortunately, MSDSs may be hard to read and may have incomplete or inaccurate information.

If you have any questions about wood dust, you can also ask your employer, your union, or your company health and safety representative.

EXPOSURE LIMITS

Cal/OSHA sets a limit on the amount of wood dust in the air at work. Your employer must make sure your exposure does not exceed five milligrams of wood dust per cubic meter of air (5 mg/m^3). This is called the **Permissible Exposure Limit (PEL)**. It refers to average exposure over an eight-hour work day. Therefore, your exposure may be above the PEL at times, but only if it is below the PEL at other times. There is a special PEL for Western red cedar (2.5 mg/m^3) because it is considered more toxic than many other types of wood. Cal/OSHA also has other exposure limits for wood dust.

Keeping exposure below the PEL will protect the health of most people, but not everyone. For example, it may be unsafe for you to be exposed to even very small amounts of wood dust if you already have asthma or certain other medical conditions.

The only reliable way to know your exposure level is to measure the amount of dust in the air while you are working. This is called air monitoring. You can't accurately judge your exposure just by looking at the amount of dust around. Some dust particles are very small and almost invisible. And you can't judge your exposure by how hard it is to breathe. You might have high exposure without noticing any immediate breathing trouble.

In many cases, your employer is required to do air monitoring. You have the legal right to see and copy the monitoring results. The air monitoring must be done by a qualified person.

OTHER HAZARDOUS SUBSTANCES

You may be exposed to many other hazardous substances while working with wood. These grow on wood or are used to treat or finish it. They include:

- Molds and fungi
- Resin binders
- Pesticides
- Paint stripper
- Glues and adhesives
- Waterproofing compounds
- Paints, lacquers, and varnishes
- Sealants, dyes, and bonding agents.

Some of these substances can cause skin, eye, and lung irritation, allergic reactions, and other health problems. Some can also cause occupational asthma. Your employer must train you about the health hazards of these substances and appropriate work practices. Your employer must also give you the proper protective equipment such as safety goggles, gloves, and a respirator.



INFORMATION AND HELP

Occupational Health Branch (OHB). This program, a part of the California Department of Health Services, provides information on workplace health hazards to workers, employers, and health professionals in California. OHB has many publications on work-related hazards.

Office phone: (510) 622-4300 www.dhs.ca.gov/ohb

Hazard Evaluation System and Information Service (HESIS). This unit in OHB has many free publications available. Call and leave a message to request publications or information on specific chemicals and other workplace health hazards.

Hazard Helpline: (510) 622-4317 www.dhs.ca.gov/ohb/hesis
Publications: (510) 622-4328

Cal/OSHA. This agency gives information, responds to confidential health and safety complaints, and inspects workplaces. To make a complaint, contact your local Cal/OSHA enforcement office. The Cal/OSHA Consultation Service offers free advice to employers (not related to enforcement).

Complaints: Check local phone book www.dir.ca.gov/dosh
Consultation: (800) 963-9424

Labor Occupational Health Program (LOHP). This program at the University of California, Berkeley issues publications, gives free advice, and has a library open to the public.

Office phone: (510) 642-5507 www.lohp.org

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